

Bringing it all together

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Isis, Lipomics collaborate on antisense candidates. **PAGE 33**

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Conference and exhibition moves to spring, plus preview new products. **PAGE 25**



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Shire wraps up rights to Vyvanse for pediatric ADHD in advance of FDA approval and expects to file NDA for adult indications.

Wyeth, Nautilus Biotech announce hemophilia deal

The research and license agreement focuses on Factor IX proteins for Hemophilia B.

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Modeling HIV behavior

Two new computer models from Simulations Plus tackle the difficult task of predicting interference of HIV replication.



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Next-gen microarrays

NYIT researcher discovers method to immobilize intact, double-stranded DNA and RNA on one microarray.

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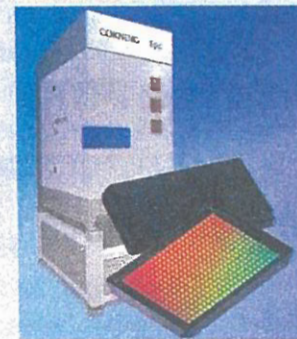
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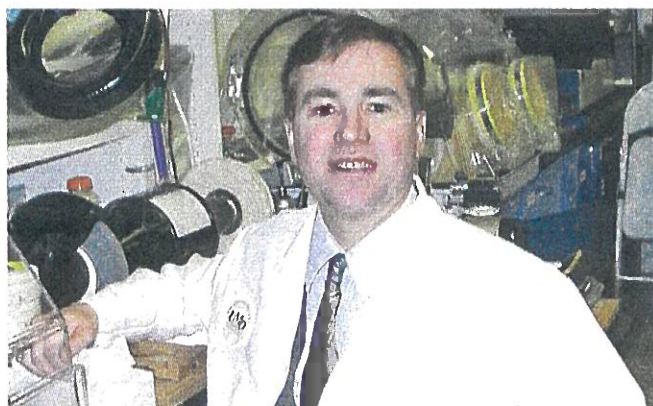
Next-gen microarrays on the way

NYIT discovery could pave way for breakthroughs in multiple diseases

BY JEFFREY BOULEY

OLD WESTBURY, N.Y.—A professor at the New York Institute of Technology has made a discovery that could free discovery researchers from having to rely on hybridization in DNA microarrays. Specifically, Dr. Claude E. Gagna, an associate professor of life sciences at NYIT's School of Health Professions, Behavioral and Life Sciences, discovered how to immobilize intact double-stranded, multi-stranded or alternative DNA and RNA on one microarray.

This immobilization will reportedly allow scientists to



NYIT's Dr. Claude E. Gagna has developed a method for immobilizing intact double-stranded, multi-stranded or alternative DNA and RNA on one microarray.

duplicate the environment of a cell and then study, examine and experiment with human, bacterial and viral genes, giving researchers a methodology to analyze more than 150,000 non-denatured genes. NYIT believes this discovery could revolutionize biological and clinical research and help lead to treatments for cancer, AIDS, Alzheimer's, diabetes, and many genetic and infectious diseases.

"This patent represents a leap forward from conventional DNA microarrays that use hybridization," says Gagna, a molecular biologist and pathologist who performs research in the structure-function of DNA in normal and diseased cells. "This will help pharmaceutical companies produce new classes of drugs that target genes, with fewer side effects. It will lower the cost and

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DNA DELIVERY DEAL

VGX Pharma acquires DNA specialist ADViSYS

BY CHRIS ANDERSON

BLUE BELL, Pa.—Six-year-old VGX Pharmaceuticals, a technology start-up out of the University of Pennsylvania, announced recently that it had merged with The Woodlands, Texas-based ADViSYS Inc., a privately held biotech company with a pipeline of DNA-delivered therapeutics as well as DNA delivery technology and cGMP manufacturing capabilities. As a result of the merger, VGX has created a new division called VGX

NYIT

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increase the speed of drug discovery, saving millions of dollars.”

NYIT is currently investigating opportunities to license the new technology, Gagna says.

The new immobilization capabilities he has discovered are important, for example, if a researcher has a drug and wants to know what it binds to in terms of nucleic acids in single-strand, double-strand, triple-strand or whatever DNA applications are being studied.

“In other words, you want to characterize your drug in terms of its potential for binding to many conformations of different types of DNA and in different environments, which is an important consideration,” Gagna says. “This will aid greatly in fine-tuning drugs and making them more specific. When people talk about drugs and interactions with DNA, it’s very general, but with this approach, we can target specific types of DNA, such as drugs that bind specifically to left-handed Z-DNA. So it will allow for a far more precise targeting of elements within genes.”

The “Gagna/NYIT Multi-Stranded and Alternative DNA, RNA and Plasmid Microarray” has been patented as Patent #6,936,461 in the United States and is pending in Europe and Asia.

In the near future, practical applications of the patent will include enabling researchers to directly target and inhibit mutated genes and/or proteins that are responsible for pathologies, making it easier to treat or even cure disease, NYIT reports. A discussion of the patent and two new applications—known as transitional structural chemogenomics and transitional structural chemoproteomics—was published in the May 2006 issue of *Medical Hypotheses*.

Additionally, Gagna has developed a novel surface that increases the adherence of the DNA to the microarray so that any type of nucleic acid can be anchored. Unlike conventional microarrays, which immobilize single-stranded DNA, scientists will now be able to “secure intact, non-denatured, unaltered ds-DNA, triplex-, quadruplex-, or pentaplex DNA onto the microarray,” says Gagna. “With this technology, one day we will have tailor-made molecular medicine for patients.” ♦

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